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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
DEVI, SARVAMANGALA J N	
ART UNIT	PAPER NUMBER
1645	

NOTIFICATION DATE	DELIVERY MODE
10/13/2011	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	09/445,517	DUFT ET AL.	
	Examiner	Art Unit	
	S. DEVI, Ph.D	1645	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 July 2011*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

5)☒ Claim(s) *23,25,27-29,31-33,35,37-39,69-71,73-75,77-80,82,85-90,95 and 96* is/are pending in the application.

5a) Of the above claim(s) *25,28, 35,69-71,73-75,77-79 and 85-90* is/are withdrawn from consideration.

6)☐ Claim(s) _____ is/are allowed.

7)☒ Claim(s) *23,27,29,31-33,37-39,80,82,95 and 96* is/are rejected.

8)☐ Claim(s) _____ is/are objected to.

9)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

10)☐ The specification is objected to by the Examiner.

11)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

12)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☒ Other: *Applicant's response of 09/02/2004*.

RESPONSE TO APPLICANTS' AMENDMENT

Applicants' Amendment

1) Acknowledgment is made of Applicants' amendment filed 07/22/11 in response to the non-final Office Action mailed 03/25/11.

Status of Claims

2) Claims 76, 84 and 97 have been canceled via the amendment filed 07/22/11.

Claims 23, 33, 80 and 82 have been amended via the amendment filed 07/22/11.

Claims 23, 25, 27-29, 31-33, 35, 37-39, 69-71, 73-75, 77-80, 82, 85-90, 95 and 96 are pending.

Claims 23, 27, 29, 31-33, 37-39, 80, 82, 95 and 96 are under examination.

Prior Citation of Title 35 Sections

3) The text of those sections of Title 35 U.S. Code not included in this action can be found in a prior Office Action.

Prior Citation of References

4) The references cited or used as prior art in support of one or more rejections in the instant Office Action and not included on an attached form PTO-892 or form PTO-1449 have been previously cited and made of record.

Rejection(s) Moot

5) The rejection of claim 76 made in paragraph 11 of the Office Action mailed 03/25/11 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 4, 6 and 7 of US patent 7,910,548, is moot in light of Applicants' cancellation of the claim.

6) The rejection of claims 76, 84 and 97 76 made in paragraph 19 of the Office Action mailed 03/25/11 under 35 U.S.C § 102(b) as being anticipated by Kolterman *et al*. (*Diabetologia* 39: 492-499, April, 1996, of record) (Kolterman *et al*., 1996) as evidenced by Itasaka *et al*. (*Psychiatr. Clin. Neurosci*. 54: 340-341, June 2000, of record), is moot in light of Applicants' cancellation of the claims.

7) The rejection of claims 76 and 84 made in paragraph 20 of the Office Action mailed 03/25/11 under 35 U.S.C § 102(a) as being anticipated by Kolterman *et al*. (WO 96/40220, of record) ('220) as evidenced by Tsanev (*Vutr. Boles* 23: 12-17, 1984, abstract, of record), is moot in light of Applicants' cancellation of the claims.

8) The rejection of claims 76 and 84 made in paragraph 22 of the Office Action mailed 03/25/11 under 35 U.S.C § 102(e)(2) as being anticipated by Gaeta *et al*. (US 5,686,411, of record) ('411) as evidenced by Tsanev (*Vutr. Boles* 23: 12-17, 1984, abstract, of record), is moot in light of Applicants' cancellation of the claims.

9) The rejection of claim 76 made in paragraph 13 of the Office Action mailed 03/25/11 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 34 and 35 of the US patent 5,686,411 issued to Gaeta *et al*. (of record) as evidenced by Tsanev (*Vutr. Boles* 23: 12-17, 1984, abstract, of record), is moot in light of Applicants' cancellation of the claim.

10) The rejection of claims 76, 84 and 97 made in paragraph 15 of the Office Action mailed 03/25/11 under 35 U.S.C. § 112, first paragraph, as not being enabled, is moot in light of Applicants' cancellation of the claims.

Rejection(s) Withdrawn

11) The rejection of claim 23 made in paragraph 17(a) of the Office Action mailed 03/25/11 under 35 U.S.C § 112, second paragraph, as being indefinite, is withdrawn in light of Applicants' amendment to the claim.

12) The rejection of claim 33 made in paragraph 17(b) of the Office Action mailed 03/25/11 under 35 U.S.C § 112, second paragraph, as being indefinite, is withdrawn in light of Applicants' amendment to the claim.

13) The rejection of claims 80 and 82 made in paragraph 17(c) of the Office Action mailed 03/25/11 under 35 U.S.C § 112, second paragraph, as being indefinite, is withdrawn in light of Applicants' amendment to the claim.

14) The rejection of claims 27, 29, 31, 32, 37-39, 80, 82, 95 and 96 made in paragraph 17(d) of the Office Action mailed 03/25/11 under 35 U.S.C § 112, second paragraph, as being indefinite, is withdrawn in light of Applicants' amendment to the base claim.

15) The rejection of claims 23 and 33 made in paragraph 12 of the Office Action mailed 03/25/11 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 31 of the US patent 5,686,411 issued to Gaeta *et al.* (of record) as evidenced by Tsanev (*Vutr. Boles* 23: 12-17, 1984, abstract, of record), is withdrawn in light of Applicants' amendment to the claims. A modified rejection is set forth below to address the claims as amended. Applicants' arguments have been fully considered, but are moot in light of the modified rejection, or have been addressed below under the rejection to the extent still applicable.

16) The rejection of claims 23, 27, 29, 31-33, 37-39, 80, 82, 95 and 96 made in paragraph 15 of the Office Action mailed 03/25/11 under 35 U.S.C. § 112, first paragraph, as being non-enabled, is withdrawn in light of Applicants' amendment to the claims and/or the base claims. A modified rejection is set forth below to address the claims as amended. Applicants' arguments have been fully considered,

but are moot in light of the modified rejection, or have been addressed below under the rejection to the extent still applicable.

17) The rejection of claims 23, 33, 80 and 82 made in paragraph 21 of the Office Action mailed 03/25/11 under 35 U.S.C § 102(e)(2) as being anticipated by Gaeta *et al.* (US 5,686,411, of record) ('411) as evidenced by Tsanev (*Vutr. Boles* 23: 12-17, 1984, abstract, of record), is withdrawn in light of Applicants' amendment to the claims and/or the base claims. A modified rejection is set forth below to address the claims as amended. Applicants' arguments have been fully considered, but are moot in light of the modified rejection, or have been addressed below under the rejection to the extent still applicable.

New Rejection(s) Necessitated by Applicants' Amendment

Double Patenting Rejection(s)

18) Claims 23 and 33 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 31 of the US patent 5,686,411 issued to Gaeta *et al.* (of record) as evidenced by Tsanev (*Vutr. Boles* 23: 12-17, 1984, abstract, of record).

Although the conflicting claims are not identical, they are not patentably distinct from each other. The method claimed in claim 31 of the US patent 5,686,411 is for the treatment of diabetes mellitus in a mammal comprising the administration to said mammal of a therapeutically effective amount of the amylin agonist analogue of claim 6, an amylin agonist analogue of the instantly recited SEQ ID NO: 14, i.e., a composition consisting essentially of an amylin agonist analogue of the instantly recited SEQ ID NO: 14. The portion of the disclosure of the '411 patent at lines 45-53 in column 7 that supports the limitation mammal does not exclude, but expressly includes a patient seen by a medical practitioner,

i.e., a human. The portion of the disclosure of the '411 patent at lines 53-59 in column 8 supporting the limitation 'therapeutically effective amount' of the amylin agonist includes the dosage units of 0.1 to 5 mg of the agonist. The portion of the disclosure of the U.S. patent '411 at lines 9-12 of column 3 that describes the limitation 'diabetes mellitus' includes insulin-requiring diabetes mellitus. The portion of the disclosure of the U.S. patent '411 at second full paragraph in column 7 that describes the limitation 'administering' does not exclude, but expressly includes subcutaneous administration. Given the art-known fact that up to 90% of diabetic patients are intrinsically obese as disclosed by Tsanev, the method of the '411 patent comprising the step of administration of a therapeutically effective amount of the amylin agonist analogue of claim 6, i.e., a composition consisting essentially of an amylin agonist analogue of the instantly recited SEQ ID NO: 14, to a diabetic human anticipates the instant claims. Given that the method step of the '411 patent and the instant claims is the same, the method of the '411 patent is expected to bring about a therapeutic effect against the intrinsic obesity and reduce the body weight in the diabetic patients.

Rejection(s) under 35 U.S.C. § 112, First Paragraph

19) The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

20) Claims 23, 27, 29, 31-33, 37-39, 80, 82, 95 and 96 are rejected under 35 U.S.C. § 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it

pertains, or with which it is most nearly connected, to make and/or use the invention.

Instant claims are evaluated based on the *Wands* analysis. Many of the factors regarding undue experimentation have been summarized in *In re Wands*, 858 F.2d 731, 8 USPQ2d 1400 (Fed. Circ. 1988) as follows:

- The quantity of experimentation necessary (time and expense);
- The amount of direction or guidance presented;
- The presence or absence of working examples of the invention;
- The nature of the invention;
- The state of the art;
- The relative skill of those in the art;
- The predictability or unpredictability of the art; and
- The breadth of the claims.

As amended, the claimed method is of treating obesity in any human subject comprising or consisting of administering to said subject a composition consisting essentially of any amylin agonist analogue comprising the amino acid sequence of SEQ ID NO: 14 as recited, wherein A1 is Lys, Ala, Ser, or hydrogen; B1 is Ala, Ser or Thr; C1 is Val, Leu or Ile; D1 is His or Arg; E1 is Ser or Thr; F1 is Ser, Thr, Gln, or Asn; G1 is Asn, Gln or His; H1 is Phe, Leu or Tyr; I1 is Ile, Val, Ala or Leu; J1 is Ser, Pro or Thr; K1 is Asn, Asp or Gln; X and Y are independently selected residues having side chains which are chemically bonded to each other to form an intramolecular linkage, wherein said intramolecular linkage comprises a disulfide bond, a lactam or a thioether linkage; and Z is an amino, alkylamino, dialkylamino, cycloalkylamino, arylamino, aralkylamino, alkyloxy, aryloxy or aralkyloxy; and provided that when A1 is Lys, B1 is Ala, C1 is Val, D1 is Arg, E1 is Ser, F1 is Ser, G1 is Asn, H1 is Leu, I1 is Val, J1 is Pro, and K1 is Asn; then one or more A to K1 is a D-amino acid and Z is selected from the group consisting of

alkylamino, dialkylamino, cycloalkylamino, arylamino, aralkylamino, alkyloxy, aryloxy or aralkyloxy, or such a composition

The genus 'human subject in need thereof' encompasses within its scope diabetic and non-diabetic humans, morbidly and non-morbidly obese humans etc. The amylin agonist analogue of the recited structure of SEQ ID NO: 14 encompasses a large number of amylin agonist analogue species. A representative number of the species, if not each of the species, encompassed within the scope of the instantly claimed method is *required* to be effective in treating obesity and reducing body weight in a diabetic or non-diabetic obese human subject, or a morbidly or non-morbidly obese human subject when administered not in conjunction with another obesity relief agent in the recited dose range. However, neither the art at the time of the invention, nor the instant specification demonstrated the obesity-treating and body weight-reducing function(s) of these amylin agonist analogue species in a diabetic or non-diabetic human in need of treatment of obesity upon administration via any route for any length of time. Whether or not the non-pramlintide species of amylin agonist analogues, which fall within the genus of SEQ ID NO: 14, are known in the art or mentioned in the instant specification, and whether or not the conventional assays for identifying amylin agonist analogues and for detecting amylin activity, are known in the art or described in the specification, is not the issue. Whether or not the non-pramlintide amylin agonist analogues, mentioned in the specification or known in the art, have been shown to mimic 'an effect' of amylin *in vitro* or *in vivo,* is not the issue. Given the breadth of the genus 'SEQ ID NO: 14', it is not possible to envisage what precise structure in the genus of 'SEQ ID NO: 14' provides for the required functionality, i.e., the ability to treat obesity and reduce body weight in a generic human subject in need thereof. The specification does not provide adequate

guidance with regard to this. With regard to the amylin agonist analogue species, a review of the instant specification indicates that the showing in the instant specification is limited to the pramlintide species. Only the pramlintide species at specific doses and via specific routes is shown to reduce body weight of a specific human population in need of treatment. However, outside this scope, neither the specification nor the art at the time showed that the amylin agonist analogues having a structure considerably different from that of pramlintide and falling within the scope of the SEQ ID NO: 14 genus, do retain the obesity-relieving biologic function(s) and the body weight-reducing therapeutic function. In other words, the instant specification fails to demonstrate that the amylin agonist analogue species having the recited amino acid substitutions or chemical modifications, if administered by one of skill in the art to a diabetic or non-diabetic obese human subject, or to a morbidly obese human subject with or without diabetes, by subcutaneous or non-subcutaneous route in the amount range recited, would elicit a therapeutic effect against obesity and reduce the body weight of the subject. Precisely what structure of the amylin agonist analogue of 'SEQ ID NO: 14' genus provides for the recited functionality, i.e., ability to treat obesity and reduce body weight in the broad genus of 'human subject in need thereof' is not identified. There is lack of enablement of the full scope of the claimed method that administers non-pramlintide amylin agonist analogue species within the SEQ ID NO: 14 genus, each having the required functional ability to treat obesity and reduce body weight in any human subject species in need thereof. It should be noted that predictability or unpredictability is one of the *Wands* factors for enablement. In the instant application, Applicants have previously acknowledged that obesity is a complex, multifactorial disease that has been the subject of decades of research. Applicants have acknowledged that there are contradictions

and confusion in the relevant art. See pages 22 and 23 of Applicants' response filed 09/02/04, which is provided as an attachment to the instant Office Action. Although Example 9 of the instant specification describes the gastric emptying assay and the effect of specific amounts of 'amylin' (as opposed to the amylin agonist analogue SEQ ID NO: 14) on gastric emptying in diabetic rats, and Examples 7 and 8 describe the receptor binding and soleus assays of some amylin variants, of the various biologic activities or functions attributed to amylin or pramlintide, which precise activity or activities provide for, or are associated with obesity relief in the 'human subject' genus has not been precisely identified. Of the various screenable activities, whether one activity, all the activities, or a specific combination of activities, are responsible for the obesity-relief function(s) was neither known in the art, nor is it established within the instant specification, absent which, one of skill in the art cannot practice the claimed invention without engaging in a considerable amount of undue experimentation. A mere screening of art-known amylin agonist analogue species falling within the genus of SEQ ID NO: 14 using the conventional screening assays does not enable one to reproducibly practice the claimed method of treatment. Whether or not the various amylin agonist analogue species encompassed within the scope of the SEQ ID NO: 14 genus have the *required* obesity relief and body weight-reducing function(s) was neither known nor could it be predicted. This is critically important in view of the *Wands* factor, predictability or unpredictability in the art. Applicants have previously stated that neither the amylin art nor the obesity art suggested or indicated an approach to trying an amylin or an amylin agonist (let alone an amylin agonist analogue) for weight reduction or treatment of obesity. See bottom of page 57 of Applicants' response filed 09/02/04, which is provided as an attachment to the instant Office Action. With regard to what was known in the art at the time of

the invention or thereafter, Applicants stated that Frishman *et al.* (*In*: *Cardiovascular Pharmacotherapeutics*. (Eds) Frishman WH *et al.* McGraw-Hill Health Professions Division, New York, Chapter 48, pages 1093-1114, February 1997, of record) 'only' concluded that 'the potential role of amylin in weight reduction 'awaits clinical investigation', thus indicating that as of February 1997 the potential role of amylin as a boy weight-reducing agent needed further investigation. See the full paragraph on page 85 of Applicants' response filed 09/02/04, which is provided as an attachment to the instant Office Action. Applicants have recognized the importance of the unpredictability previously. For example, with regard to the gastric emptying function/activity and obesity, Applicants have previously taken the position that there is *no agreement* on the effect of gastric emptying in obesity. Applicants pointed to various reportings and stated that the role of gastric emptying in obesity was uncertain and controversial at the time of filing of the instant application, as well as before and after. See page 37 of Applicants' response filed 09/02/04, which is provided as an attachment to the instant Office Action. Applicants mentioned of the Minnesota Medical Association's recent reporting that gastric emptying is useful in treating diabetics, but researchers are 'uncertain' whether it will produce weight loss. See page 37 of Applicants' response filed 09/02/04, which is provided as an attachment to the instant Office Action. Applicants have gone on the record previously stating that any and all compounds having any gastric emptying activity are not necessarily useful for treating obesity, let alone one that is being evaluated for use in the treatment of diabetes. See lines 4-6 on page 85 of Applicants' response filed 09/02/04, which is provided as an attachment to the instant Office Action. With the art-known fact that obesity is a complex and multifactorial disease and with the precise amylin or pramlintide activity contributing to obesity relief being unknown

at the time of the invention, there was no predictability that the a representative number of the recited amylin agonist analogue species having the recited amino acid substitutions or chemical modifications and being encompassed within the genus of SEQ ID NO: 14 would be therapeutically functional as effective obesity-relief agents and body weight-reducing agents in any human subject species in need of obesity treatment. Furthermore, the effects the various amino acid substitutions and/or chemical modifications would have on the activity of amylin agonist analogues which contribute to the reported undesired side effects, including recurrent nausea and vomiting and excessive anorexia, are also unpredictable as the various amino acid substitutions and/or chemical modifications encompassed within SEQ ID NO: 14 can potentially render the amylin agonist analogue species unacceptably nausea- or vomiting-inducing. In sum, the instant specification simply lacks a concrete *in vivo* showing that a representative number of amylin agonist analogue species encompassed within the SEQ ID NO: 14 genus has obesity-relieving and body weight-reducing functions in any human subject in need of the claimed method of treatment. Most importantly and contrary to Applicants' statement that no factual information is made of record, the Office documented the fact that, at the time of the invention, amyin agonist analogues having amylin activities served as therapeutic agents **for treating anorexia** in patients deficient in adipose tissue. See page 7 and 16 and claims 1 and 8 of Rink *et al*. (WO 92/20367, of record). Applicants have advanced no arguments with regard to this factual information documented by the Office. This knowledge in the art at the time of the invention establishes that despite having amylin agonistic functions including the gastric emptying functions, the art-known amylin agonist analogues served as **anorexia-treating agents** at the time of the invention. *Accordingly, which precise amylin agonistic activities are associated with*

anorexia-treating effects and which other amylin agonistic activities are associated with obesity-treating effects was neither known at the time of the invention, nor is it disclosed in Applicants' specification. Furthermore, the therapeutically effective amount of amylin for the treatment of anorexia was about 0.1 to 10 mg. See page 13 of Rink *et al.* (WO 92/20367, of record). Note that the amount of SEQ ID NO: 14 recited in instant claims 23, 33, 80 and 82 falls within this range. Rink *et al.* also discovered that two weeks of amylin administration resulted in no weight reduction in both dogs and rats. See page 11 of Rink *et al. With this knowledge in the art, there was no predictability that the amylin agonist analogue species encompassed within the genus SEQ ID NO: 14 would serve as anti-obesity therapeutic agents as opposed to anorexia-treating agents.*

Claims must be enabled over the whole breadth. In this respect, if there are doubts, substantiated by verifiable facts, there is lack of sufficient enablement. The post-filing teachings of Mack (2003) pointed to by Applicants are not representative of the state of the art at the time of the instant invention and do not provide evidence that the amylin agonist analogue species encompassed within the genus of SEQ ID NO: 14 reduce body weight and treat obesity in human subjects upon chronic or non-chronic administration to human subjects of the amylin agonist analogue species encompassed within the genus of SEQ ID NO: 14. Note that none of the instant claims are limited to the chronic administration to a human subject of the recited amylin agonist analogue species of the genus of SEQ ID NO: 14. Furthermore, the courts have held that it is the specification, not the knowledge of one skilled in the art, which must supply the novel aspects of an invention in order to constitute adequate enablement. See *Genentech Inc. v. Novo Nordisk A/S Ltd., 42 USPQ2d 1001).* Moreover, the specification must have been enabling at the time the invention was made. See *In re Wright, 27 USPQ2d 1510.*

Due to the lack of specific guidance and direction, the lack of evidence and working examples enabling the full scope, the breadth of the claims, the quantity of experimentation necessary, and the art-recognized unpredictability, a considerable amount of undue experimentation would have been required to practice the instant invention. Instant claims fail to meet the enablement provision of 35 U.S.C. § 112, first paragraph.

Rejection(s) under 35 U.S.C § 102

21) The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
> **(e)** the invention was described in-
> **(2)** a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

22) Claims 23, 27, 33, 37, 80 and 82 are rejected under 35 U.S.C § 102(e)(2) as being anticipated by Gaeta *et al.* (US 5,686,411, of record) ('411) as evidenced by Tsanev (*Vutr. Boles* 23: 12-17, 1984, abstract, of record).

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 C.F.R 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention 'by another', or by an appropriate showing under 37 C.F.R 1.131.

Gaeta *et al.* ('411) taught a method of administration to a mammal having diabetes mellitus, including a patient seen by a medical practitioner, i.e., a human, a therapeutically effective amount of the amylin agonist analogue of claim 6, i.e.,

amylin agonist analogue of SEQ ID NO: 14. Gaeta *et al.* ('411) taught subcutaneous administration of the composition of their invention. See second full paragraph in column 7. See claims 31; and lines 45-53 in column 7 of the '411. Gaeta *et al.* ('411) taught the 'therapeutically effective amount' of the amylin agonist to include the dosage units of 0.1 to 5 mg or 0.5 to 1.0 mg of the amylin agonist. See lines 53-59 in column 8. The amount effective to treat obesity, inhibit weight gain, or induce weight loss encompassed in the instant claims as described in the instant application, for example, about 0.01 milligrams to about 5 milligrams per day, about 0.05 milligrams to about 2 milligrams per day, or 300 micrograms per dose, falls within the range of therapeutically effective amount of the amylin agonist disclosed in the '411 patent. Lines 9-14 of column 3 of the U.S. patent '411 describe that the limitation 'diabetes mellitus' includes insulin-requiring diabetes mellitus and that the administration was of amylin agonist analogue *alone*. Other than a pharmaceutical carrier, Gaeta's composition consisted essentially of the amylin agonist analogue, without insulin or glucagon. See claims 31 and 6; and lines 9-11 in column 7; and lines 37-39 in column 8. Given the art-known prevalence of intrinsic obesity in 80% to 90% of diabetic patients as disclosed by Tsanev (see abstract), at least one of the diabetic patients administered with the amylin agonist analogue of SEQ ID NO: 14 in the method disclosed by the '411 patent qualifies as a human patient in need of treatment for obesity. Therefore, the method of the '411 patent of the administration of 0.1 to 5 mg, or 0.5 to 1.0 mg of the amylin agonist analogue of SEQ ID NO: 14 to a diabetic human anticipates the instant claims. Given that the method step of the '411 patent and the instant claims are the same, the amylin agonist analogue of SEQ ID NO: 14 administered and the amount administered are the same, the method of the '411 patent is expected to bring about a therapeutic effect against obesity and a body weight-reducing effect in

the intrinsically obese SEQ ID NO: 14 -treated insulin-requiring diabetic patient of Gaeta ('411). Since the structural limitations of the instantly claimed method and all of the criteria required by the instant claims are met by the teachings of the '411 patent, Gaeta's ('411) method is expected to serve necessarily as the instantly claimed method and is expected to bring about the obesity-treating effect, body weight-reducing effect, weight gain-inhibiting effect, or weight loss-inducing effect. The Office's position that Gaeta's ('411) method is the same as the Applicants' claimed method is based upon the fact that the method step, the amylin agonist analogue of SEQ ID NO: 14 administered, the amount of the SEQ ID NO: 14 administered, and the 80-90% intrinsically obese diabetic human patient to whom the SEQ ID NO: 14 was administered, are the *same* in the two methods. The art-recognized intrinsic obesity being prevalent in 80 to 90% of diabetic patients as disclosed by Tsanev (see abstract), Gaeta's ('411) method of administration of the above-identified therapeutically effective amount (i.e., 0.1 to 5 mg, or 0.5 to 1.0 mg) of the amylin agonist analogue, SEQ ID NO: 14, to 80 to 90% of intrinsically obese type 2 diabetic human subject anticipates the instant claims. Given that the method step of the Gaeta's ('411) method and the instant claims are the same, Gaeta's ('411) method is expected to bring about the weight gain-inhibiting, body weight-reducing, weight loss-causing, or obesity-treating effect against the intrinsic obesity in the SEQ ID NO: 14-treated, insulin-requiring human diabetic patient. Since the Office does not have the facilities for examining and comparing Applicants' claimed method with that of the prior art, the burden is on Applicants to show a novel difference between the claimed method and the method of the prior art. See *In re Best*, 562 F.2d 1252, 195 USPQ 430 (CCPA 1977) and *In re Fitzgerald et al.*, 205 USPQ 594. MPEP 2112 refers to *In re Best* to explain that something which is old does not become patentable upon the discovery of a new

property; 'the claiming of a new use, new function or unknown property which is inherently present in the prior art does not necessarily make the claim patentable. *In re Best*, 562 F.2d 1252, 1254, 195 USPQ 430, 433 (CCPA 1977)'. Since the prior art clearly teaches the instantly claimed method, any assertions of specific functional properties attributed to the amylin agonist analogue of SEQ ID NO: 14 in the claimed method are merely inherent and do not necessarily make the claimed method patentable.

Claims 23, 27, 33, 37, 80 and 82 are clearly anticipated by Gaeta *et al.* ('411). The publication of Tsanev is **not** used as a secondary reference in combination with the reference of Gaeta *et al.* ('411), but rather is used to show that every element of the claimed subject matter is disclosed by Gaeta *et al.* ('411) with the unrecited limitation(s) being inherent as evidenced by the state of the art. See *In re Samour* 197 USPQ 1 (CCPA 1978). 'To serve as an anticipation when the reference is silent about the asserted inherent characteristic, such gap in the reference may be filled with recourse to extrinsic evidence. Such evidence must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill.' *Continental Can Co. USA v. Monsanto Co*., 948 F.2d 1264, 1268, 20 USPQ2d 1746, 1749 (Fed. Cir. 1991). Note that as long as there is evidence of record establishing inherency, failure of those skilled in the art to contemporaneously recognize an inherent property, function or ingredient of a prior art reference does not preclude a finding of anticipation. *Atlas Powder Co. v. IRECO Inc*., 190 F.3d 1342, 1349, 51 USPQ2d 1943, 1948 (Fed. Cir. 1999). See MPEP 2124. Tsanev's extrinsic evidence makes clear that the missing descriptive matter, i.e., prevalence of obesity in at least one of Gaeta's ('411) insulin-requiring diabetic subjects administered with SEQ ID NO: 14, is necessarily present in the

thing described by Gaeta *et al.* ('411). The method of Gaeta *et al.* ('411) clearly anticipates the claimed method of the instant invention, because Gaeta *et al.* ('411) taught the very step of the instantly claimed method in the very same diabetic human patient. The alleged failure of Gaeta *et al.* ('411) to expressly mention treatment of obesity as a goal is irrelevant. To the extent the method embodiment in the claimed invention achieves treatment of obesity, so does the method of Gaeta *et al.* ('411). Where the result is a necessary consequence of what was deliberately intended, it is of no import that the article's authors did not appreciate the results. See *Mehl/Biophile International Corp. v. Milgraum*, U.S. Court of Appeals Federal Court, 52 USPQ2d 1303 and 1306, 192 F3d 1362, 1999 citing *W.L. Gore & Assocs. v. Garlack, Inc.*, 721 F.2d 1540, 1548, 220 USPQ 303, 309 (Fed. Cir. 1983).

Remarks

23) Claims 23, 27, 29, 31-33, 37-39, 80, 82, 95 and 96 stand rejected.

24) Applicants' amendment necessitated the new ground(s) of rejection presented in this Office Action. **THIS ACTION IS MADE FINAL.** Applicants are reminded of the extension of time policy as set forth in 37 C.F.R 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 C.F.R 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however,

will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Correspondence

25) Papers related to this application may be submitted to Group 1600, AU 1645 by facsimile transmission. Papers should be transmitted via the PTO Central Fax number, (571) 273-8300, which receives transmissions 24 hours a day and 7 days a week.

26) Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.Mov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (in USA or CANADA) or 571-272-1000.

27) Any inquiry concerning this communication or earlier communications from the Examiner should be directed to S. Devi, Ph.D., whose telephone number is (571) 272-0854. A message may be left on the Examiner's voice mail system. The Examiner can normally be reached on Monday to Friday from 7.15 a.m. to 4.15 p.m. except one day each bi-week, which would be disclosed on the Examiner's voice mail system.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Gary Nickol, can be reached on (571) 272-0835.

/S. Devi/
Primary Examiner
AU 1645

September, 2011